In the Claims

Please amend the claims as follows:

1. (currently amended) A method for creating a model~~ing~~of ~~the~~ inputs and outputs of integrated circuits, comprising the steps of:

representing in the model the output characteristics of integrated circuit driver circuits by two types of elements, switching and non-switching;

tabulating the output characteristics for each of the elements by applying a DC voltage source on the output of the driver circuits and measuring the current through each element;

representing in the model switching elements as ~~a~~ voltage-time controlled resistors by obtaining the product of DC impedance as a function of voltage and a scalar that is a function of time; and

embedding in the model equations that are functions of input edge arrival times and cycle time for each scalar type.

2. (currently amended) The method of claim 1 also comprising the step of :

accounting for variations in temperature and supply voltages in the intergrated circuit, wherein~~device~~ DC characteristics are~~can be~~ obtained from g~~the~~ *dc_base* according to the equation: dc_impedance = (1+D0)**dc_base*, where DO is a function of supply voltage and temperature.

3. (currently amended) The method of claim 1 where the step of representing as a voltage time controlled resistor also comprises the step of: normalizing the time controlled impedance to the dc impedance to produce the ~~a time-varying~~ scalar that is a function of time~~independent of the load used during characterization~~.

4. (currently amended) The method of claim 1 where the~~such~~ representation of the voltage-time controlled resistor is obtained starting with a midpoint of the input transition.

5. (original) The method of claim 1 also comprising the step of saving the scalars in a tabular format.

6. (original) The method of claim 1 also comprising the step of making wave-forms for the switching elements periodic in definitions as functions of periodic rising and falling input edge arrival times.

7. (original) The method of claim 1 also comprising the step of applying indexing equations to account for variations in environmental conditions.

8. (original) The method of claim 7 wherein the environmental conditions are slew rate, temperature or supply voltage.

9. (original) The method of claim 1 where the switching elements reflect composite transient impedance behavior of a pull-up or pull-down network that are comprised of a plurality of FETs and parasitics.

10. (original) The method of claim 1 where the non-switching elements are an ESD device and a power clamp.

11. (original) The method of claim 1 where the method also comprising the steps of obtaining behavioral characteristics for a pre-drive current stage and a decoupling stage and applying them to the model.

12. (currently amended) A method for creating a model~~ing~~ of ~~the~~ inputs and outputs of integrated circuits, comprising the steps of:

representing in the model the output characteristics of integrated circuit driver circuits by two types of elements, switching and non-switching;

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tabulating the output characteristics for each of the elements by applying a DC voltage source on the output of the driver circuits and measuring the current through each element;

representing in the model switching elements as ~~a~~ voltage-time controlled resistors by obtaining the product of DC conductance as a function of voltage and a scalar that is a function of time; and

embedding in the model equations that are functions of input edge arrival times and cycle time for each scalar type.

13. (currently amended) The method of claim 12 also comprising the step of :

accounting for variations in temperature and supply voltages in the integrated circuit, wherein ~~device~~DC characteristics are~~can be~~ obtained from a~~the~~ *dc_base* according to the equation: dc_conductance = (1+D0)**dc_base*, where DO is a function of supply voltage and temperature.

14. (currently amended) The method of claim 12 where the step of representing as a voltage time controlled resistor also comprises the step of: normalizing the time controlled conductance to the dc conductance to produce the~~ a time-varying~~ scalar that is a function of time~~independent of the load used during characterization~~.

15. (currently amended) The method of claim 12 where the~~such~~ representation of the voltage-time controlled resistor is obtained starting with a midpoint of the input transition.

16. (original) The method of claim 12 also comprising the step of saving the scalars in a tabular format.

17. (original) The method of claim 12 also comprising the step of making wave-forms for the switching elements periodic in definitions as functions of periodic rising and falling input edge arrival times.

18. (original) The method of claim 12 also comprising the step of applying indexing equations to account for variations in environmental conditions.

19. (currently amended) The method of claim 18 wherein the environmental conditions are slew rate, temperature or supply voltage.~~-~~

20. The method of claim 12 where the switching elements reflect composite transient conductance behavior of a pull-up or pull-down network that are comprised of a plurality of FETs and parasitics

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21. (original) The method of claim 12 where the non-switching elements are an ESD device and a power clamp.

22. (original) The method of claim 12 where the method also comprising the steps of obtaining behavioral characteristics for a pre-drive current stage and a decoupling stage and applying them to the model.

23. (currently amended) A circuit which is used to model integrated circuits which comprises:

switching elements connected serially as voltage-time controlled resistors, one of the conductive elements ~~acts to~~is pulling voltage up, the other conductive elements is~~acts to~~ pullings the voltage down; and

non-switching elements connected serially as resistors, one representing power structures and the other representing ground clamping structures;

each of the switching elements tied to input stage and both the switching and non-switching elements tied to an output.

24. (original) The circuit of claim 23 which also comprises a pre-drive stage coupled to the switching elements and a decoupling stage tied to the switching and non-switching elements and the pre-drive stage.

25. (original) The circuit of claim 24 where a fixed value element is used to represent the pre-drive or decoupling stage.

26. (original) The circuit of claim 24 where a non-switching element that is a function of parameters that not vary in time is used to represent the pre-drive or decoupling stage.

27. (original) The circuit of claim 24 where a switching element which is a function of both time and non-time varying parameters is used to represent the pre-drive or decoupling stage.

28. (currently amended) A method for creating a model~~ing~~of ~~the~~ inputs and outputs of integrated circuits, comprising the steps of:

representing in the model the output characteristics of integrated circuit driver circuits by two types of elements, switching and non-switching;

tabulating the output characteristics for each of the elements by applying a DC voltage source on the output of the driver circuits and measuring the current through each element;

representing in the model switching elements as ~~a~~ voltage-time controlled resistors by obtaining the product of DC conductance or impedance as a function of voltage and a scalar that is a function of time;

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accounting for variations in input slew rate, temperature, and supply voltages where device turn-on characteristic can be obtained from *device_turn_on _base* according to the equation:

device_turn_on = *device_turn_on_base* + (K0 + K1*max(*device_turn_on_base* -K2, 0)), where K0, K1, and K2 are functions of supply voltage, input slew rate, and temperature;

accounting for variations in temperature and supply voltages in the integrated, wherein ~~device~~ DC characteristics are~~can be~~ obtained from a~~the~~ *dc_base* according to the equation: dc_impedance (conductance) = (1+D0)**dc_base*, where DO is a function of supply voltage and temperature; and

embedding in the model equations that are functions of input edge arrival times and cycle time for each scalar type.

29. (currently amended) A method for creating a model~~ing~~ of ~~the~~ inputs and outputs integrated circuits, comprising the steps of:

representing in the model the output characteristics of integrated circuit driver circuits by two types of elements, switching and non-switching;

tabulating the output characteristics for each of the elements by applying a DC voltage source on the output of the driver and measuring the current through each element;

representing in the model switching elements as ~~a~~ voltage-time controlled resistors by obtaining the product of DC conductance or impedance as a function of voltage and a scalar that is a function of time;

accounting for variations in input slew rate, temperature, and supply voltages, device turn-on characteristic can be obtained from *device_turn_on _base* according to the equation:
device_turn_on = *device_turn_on_base* + (K0 + K1*max(*device_turn_on_base* -K2, 0)), where K0, K1, and K2 are functions of supply voltage, input slew rate, and temperature;

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accounting for variations in temperature and supply voltages, device DC characteristic can be obtained from a~~the~~ *dc_base* according to the equation:
dc_impedance(conductance) = (1+D0)**dc_base*, where DO is a function of supply voltage and temperature; and

embedding in the model equations that are functions of input edge arrival times and cycle time for each scalar type.

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